

REMARKS

In the office action mailed from the United States Patent and Trademark Office May 19, 2005. Claims 1-14, 16-22, 24-43, 45, 47-53, and 56-58 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,133,519 (“Falco”); claims 1-7, 12-14, 16, 17, 19-22, 24-26, 29-34, 37-39, 43-45, 47-49 and 52-58 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,505,409 (“Wells”); rejected claims 1-14, 16, 17, 19-22, 24-43 and 47-58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Falco; and claims 15, 23 and 46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wells in view of U.S. Patent No. 5,540,406 (“Occhipinti”). Accordingly, applicant respectfully provides the following:

Rejections Under 35 U.S.C. § 102

The prior art cited by the examiner fails to teach or suggest the claim or limitations of the present invention. Verdegall Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). Independent claim 1 as amended recites a regulator incorporated into the surface of an object comprising a removeably attached fluid flow regulator comprising: a leading edge; an orthogonal pressure recovery drop; a subatmospheric barrier; and a trailing edge that defines and extends from the base of said pressure recovery drop that provides a trailing flow boundary for said fluid. Independent claims 21, 31, 32, 38, 43, 56 and 57 include similar limitations. Falco discloses a system for providing “rearward facing microsteps”. Falco does not teach or suggest removeably attaching a fluid flow regulator as claimed in the presently amended independent claims. Thus, the present invention is novel over Falco.

Rejections Under 35 U.S.C. § 103(a)

The claims of the present invention have been rejected as being unpatentable under 35 U.S.C. § 103 over Wells, Falco and Wells in view of Occhipinti. Accordingly, Applicant respectfully provides the following.

Wells

Wells fails to render the present invention obvious. Wells provides for “steps gradually sloping outward in a direction of flight”. As noted above, the presently amended invention recites limitations for a removeably attached fluid flow regulator comprising an orthogonal pressure recovery drop. Wells fails to teach or fairly suggest the use of a removeably attached fluid flow regulator comprising of an orthogonal pressure recovery drop. Accordingly, Wells does not teach or suggest the recited elements of the independent claims of the present invention, and therefore does not render the claims of the presently amended invention unpatentable.

Falco

Falco fails to teach or fairly suggest the recited limitations of the present invention. Falco discloses a fluid flow regulator on the surface of an object comprising a plurality of steps. Falco fails to teach or fairly suggest a removeably attached fluid flow regulator comprising an orthogonal recovery drop. Accordingly, Falco fails to render the claims of the present invention obvious.

Wells in view of Occhipinti

Wells in view of Occhipinti fails to teach or fairly suggest the limitations of the presently amended claim set. In particular, the claims of the present invention recite limitations for a removeably attached fluid flow regulator comprising an orthogonal pressure recovery drop. Wells discloses a method for reducing drag in air frames or air foils. Each of the steps or drops disclosed by Wells are characterized by an obtuse or acute angle. None of the pressure recovery drops disclosed by Wells are orthogonal. Additionally, Wells fails to disclose the concept of removeably attaching a fluid flow regulator.

Occhipinti discloses a method for providing indentations in the boundary layer of a surface to change the characteristics of the flowing fluid. In Figure 6 and 7, Occhipinti discloses a perforated veneer attached to a propeller surface to provide the indentations at maximum camber. However, Occhipinti fails to disclose whether the perforated veneer is permanently or removeably attached to the propeller surface. Additionally, Occhipinti fails to disclose the use of

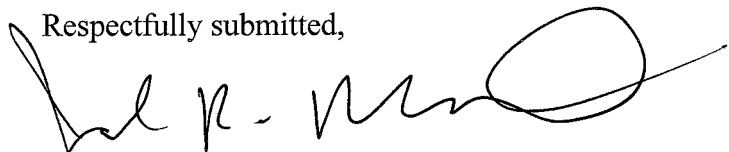
an orthogonal pressure recovery drop. Accordingly, the claims as amended are not taught or fairly suggested by by Wells in view of Occhipinti, and the claims of the present invention are therefore not rendered obvious by the combination of cited art.

CONCLUSION

Applicants submit that the amendments made herein do not add new matter and that the claims are now in condition for allowance. Accordingly, Applicants request favorable reconsideration. If the Examiner has any questions or concerns regarding this communication, the Examiner is invited to call the undersigned.

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Respectfully submitted,



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